Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for

Rowley Water Department

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

PWS Name	Rowley Water Department
PWS Address	39 Central Street
City/Town	Rowley
PWS ID Number	3254000
Local Contact	John Rezza - Water Superintendent
Phone Number	978-948-2640

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

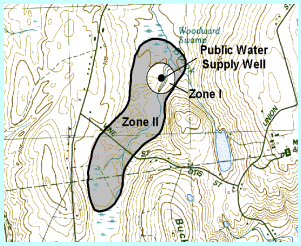
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection
4. Additional Resources Available for Source Protection
5. Appendices

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II protection area.



Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

Section 1: Description of the Water System

Zone II #: 415 ***Susceptibility:*** High

Well Names	***Source IDs***
Haverhill St. GP Well – Sta. 2	3254000-02G

Zone II #: 420 ***Susceptibility:***

Well Names	***Source IDs***
Boxford Rd GP Well – Sta. 3	3254000-03G
Pingree Farm Road Wellfield	Not yet assigned

The wells for the Rowley Water Department are located within two separate water supply protection areas, with portions of the Zone II for the Haverhill Street Well extending into Ipswich, and portions for the Boxford Road Well and Pingree Farm Road Wellfield extending into the towns of Boxford, Georgetown, and Ipswich. Each well has a Zone I radius of 400 feet. The wells are located in aquifers with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration. Please refer to the attached map of the Zone II.

Rowley is in the process of developing the Pingree Farm Road Wellfield. A condition for final approval of this well is that the Town of Rowley must adopt land use controls that comply with DEP Wellhead Protection Controls that meet 310 CMR 22.21(2)

For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web at http://www.epa.gov/safewater/ccr1.html

Section 2: Discussion of Land Uses in the Protection Areas

The Zone IIs for Rowley are predominantly forested and residential, with a mixture of commercial, light industry, and recreational land uses (refer to attached map for details). Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Table of Regulated Facilities and Table of Underground Storage Tanks in Appendix B.

Key issues include:

1. Inappropriate Activities in Zone I
2. Agricultural Activities
3. Local Businesses
4. Oil or Hazardous Material Contamination Sites
5. Residential Land Uses and Activities
6. Transportation Corridor
7. Comprehensive Wellhead Protection Planning

The overall ranking of susceptibility to contamination for Rowley is high, based on the presence of at least one high threat land use within each Zone II, as seen in Table 2.

1. Inappropriate Activities in Zone I – Some older wells may not meet the Zone I requirement. In many cases the land is owned by municipalities, and is used for recreational activities.

Inappropriate Activities in Zone I continued:
Among the significant threats to water supplies are septic systems, pesticides and fertilizers, storm water runoff and underground storage tanks which often accompany these land uses. Not owning or controlling the Zone I of a groundwater source puts drinking water supplies at significantly increased risk of contamination.

The "Drinking Water Regulations of Massachusetts" 310 CMR 22.21(3)(b) states that all suppliers of water shall acquire ownership or control of sufficient land around wells used as sources of drinking water to protect the water from contamination. This requirement shall generally be deemed to have been met if all land within the Zone I is under ownership or control of the supplier of water.

Inappropriate Activities in Zone I - Recommendations

- ✓ **Ownership or Control – Haverhill Street Well:** Request that the Town of Rowley discontinue the use of the ball field in the Zone I of the Haverhill Street Well. If outright ownership is not an immediate option, attempt to negotiate a Conservation Restriction with the Town, and private property owner for the purpose of providing and promoting exclusive and perpetual protection of water supply and water quality.
- ✓ **Boxford Road Well and Pingree Farm Road Wellfield:** Monitor progress for adopting of the Conservation Restriction that was approved at the November 5, 2001 Town Meeting.
- ✓ **Agreement Options -** Until land is available, attempt to obtain a *Memorandum of Understanding* and *Right of First Refusal.*
  Memorandum of Understanding (MOU) is an agreement between the landowner and public water supplier in which the landowner agrees not to engage in specific threatening activities. The MOU should be specific to the land use or activity. For instance, if the land is residential with a septic system the owner could agree not to place chemicals, petroleum products, or other hazardous or toxic substances, including septic system cleaners into the septic system, and that the system will be pumped at a specific frequency. Understanding how and activity threatens drinking water quality is an important component of developing and effective MOU.

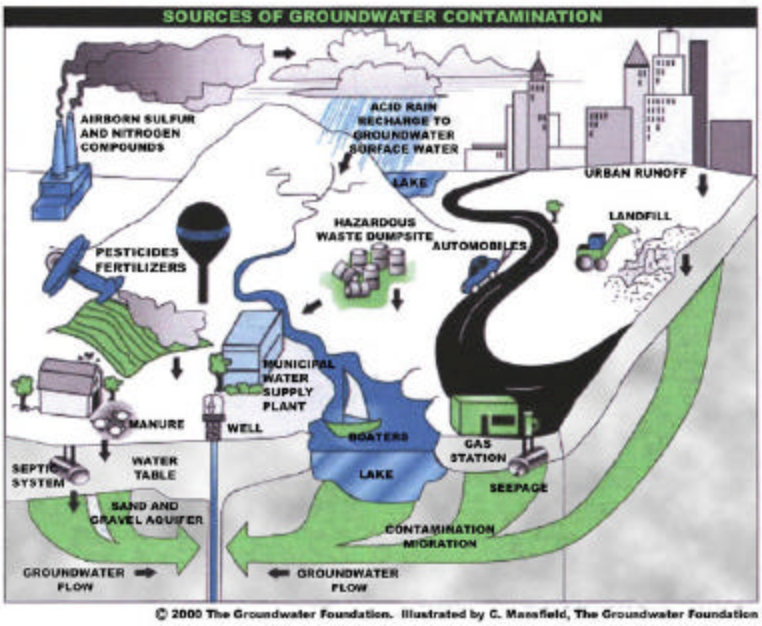
Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.

2. Agricultural Activites - Pesticides used to control weeds, insects and plant diseases have the potential to contaminate groundwater which is used as a drinking water source. Improper disposal, accidental spills, excessive or inappropriate use, misapplication, are all ways in which pesticides can contaminate groundwater supplies.



Fertilizers used to promote plant growth also have the potential to contaminate water sources if applied improperly. The principle components of fertilizer are nitrogen, phosphorus and potassium (N-P-K). Nitrogen is the main nutrient for new, green growth, phosphorus promotes root development and potassium improves the overall health of plants. Excessive amounts of nitrogen and phosphorus are the nutrients most likely to adversely affect water quality.

Animal waste from barnyards, manure pits and field application can pollute ground and surface water when not contained or applied properly. Manure leachate can flow overland to a watercourse and its components can move down through soil to enter groundwater and ultimately drinking water wells. The nutrients in manure that boost plant growth can be a pollution hazard if the manure is improperly handled.

Agricultural Activites Recommendations - Pesticides

- ✓ **Integrated Pest Management -** Integrated Pest Management (IPM) is the use of all means of pest control (chemical and non-chemical) in a compatible fashion to reduce crop losses. Pesticides are the last line of defense and are used only when pest levels are causing sufficient damage to offset the expense of the application. Encourage landowners to participate in IPM Certification: *Partners with Nature.* This program is a voluntary, collaborative effort of the Department of Food and Agriculture (DFA), the UMass Extension, and the USDA's Farm Service Agency which recognizes growers who practice IPM. This program certifies the practice by which certain crops are grown. Growers who follow specific IPM guidelines, and complete a verification process become IPM-certified. Participants are licensed to display the *Partners with Nature* trademark, and receive educational and marketing materials for public distribution and display.
  For more information on this program contact the Massachusetts Department of Food and Agriculture (DFA), 251 Causeway Street, Boston, MA 02114. Telephone: 617- 626-1700. Website: www.massdfa.org
- ✓ **Storage and Handling** - Safety is the key element in pesticide storage. The safest approach to any pesticide problem is to limit the amounts and types of pesticides stored. The amounts and types of pesticides stored should be maintained at the level that is immediately required and should not be stored beyond immediate needs. For additional information on the proper handling and storage of pesticides, refer landowners to Massachusetts Department of Food and Agriculture (DFA) Pesticide Bureau Publication "Recommended Practices For Mixing, Loading and Storage of Pesticides", which can be obtained by contacting the Massachusetts Department of Food and Agriculture (DFA), 251 Causeway Street, Boston, MA 02114. Telephone: 617- 626-1700. Website: www.massdfa.org
- ✓ **Proper Pesticide Application -** If pesticides must be used, proper handling and application according to the EPA-approved label are essential. Select an effective pesticide for the intended use and, where possible, use products that pose lower human and environmental risks (i.e., low-persistence). Read the pesticide label for guidance on required setbacks from water, agricultural drainage wells and tile networks, buildings, wetlands, wildlife habitats, and other sensitive areas where applications are prohibited. Additional information on pesticide application may be obtained from the United States Office of Water EPA Source Water Protection Practices Bulletin "Managing Large-Scale Application of Pesticides to Prevent Contamination of Drinking Water "
- ✓ **Education -** Recommend that all persons involved in the application of pesticides maintain a pesticide license or certification with the Massachusetts Department of Food and Agriculture including all applicable training and re-certification courses.

Agricultural Activites Recommendations - Fertilizer

- ✓ **Application -** Recommend the use of a slow-release nitrogen fertilizer. There are two basic forms of nitrogen contained in fertilizer products: fast-release or Water Soluble Nitrogen (WSN), and slow-release or Water Insoluble Nitrogen (WIN). Slow-release fertilizers provide a more controlled release of nitrogen thereby limiting the amount of fertilizer leaching into groundwater.

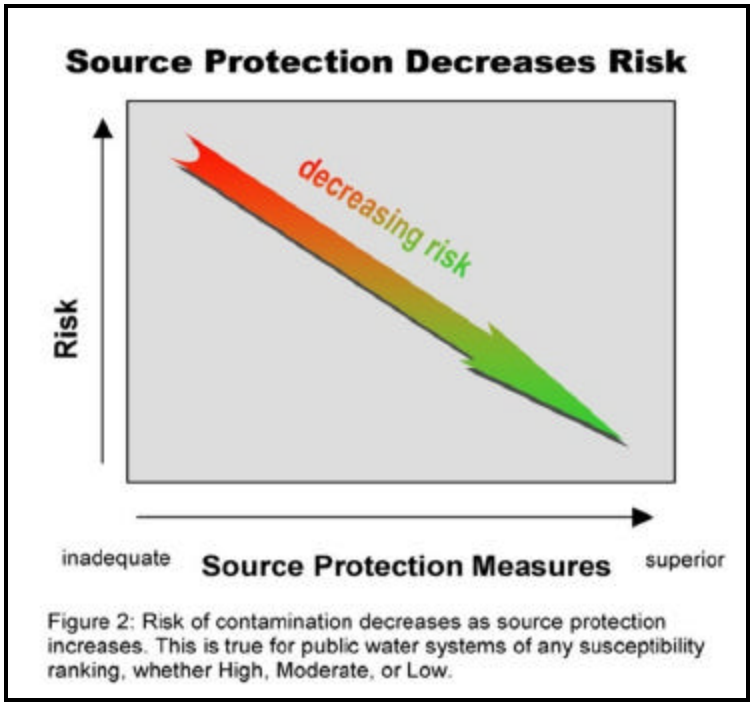


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

- ✓ **Storage** - Properly store fertilizer. Unused fertilizer should be removed from the spreader and returned to the original bag or container for future use. Store unused fertilizer in a dry place away from any water source. If stored fertilizer gets wet you not only lose nutrient value, there is potential for nitrates to leach into water sources.
- ✓ **Vegetated Buffers** - Encourage the use of vegetated buffer strips. Leave a strip of unfertilized grasses or natural vegetation near any water body. This helps against erosion and produces a trap for unwanted nutrients.

  For additional information on fertilizer use, refer to Massachusetts Department of Food and Agriculture (DFA) Pesticide Bureau Publication "Protecting Water Sources from Fertilizer" and the United States Office of Water EPA Source Water Protection Practices Bulletin "Managing Agricultural Fertilizer Application to Prevent Contamination of Drinking Water "

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Protection Areas (Zones I and II)

For more information, refer to Appendix 2: Regulated Facilities within the Water Supply Protection Area

Activities	Quantity	Threat*	Zone II ID#	Potential Source of Contamination*
Agricultural				
Fertilizer Storage or Use	1	M	420	Fertilizers: spills, leaks, or improper handling or storage
Manure Storage or Spreading	3	H	415	Manure (microbial contaminants): improper handling
Pesticide Storage or Use	1	H	420	Pesticides: spills, leaks, or improper handling or storage
Commercial				
Gas Stations	1	H	415	Automotive fluids and fuels: spills, leaks, or improper handling or storage
Service Stations/Auto Repair Shops	1	H	415	Automotive fluids, and solvents: spills, leaks, or improper handling
Bus and Truck Terminals	1	H	415	Fuels and maintenance chemicals: spills, leaks, or improper handling
Junk Yards and Salvage Yards	1	H	415	Spills, leaks, or improper handling of automotive chemicals, wastes, and batteries
Sand And Gravel Mining/ Washing	1	M	415	Heavy equipment, fuel storage, clandestine dumping: spills or leaks
Industrial				
Hazardous Materials Storage	1	H	415	Hazardous materials: spills, leaks, or improper handling or storage
Residential				
Fuel Oil Storage (at residences)	Numerous	M	415, 420	Fuel oil: spills, leaks, or improper handling
Lawn Care/Gardening	Numerous	M	415, 420	Pesticides: over-application or improper storage and disposal
Septic Systems/Cesspools	Numerous	M	415, 420	Household hazardous waste: improper disposal, and microbial contaminants
Miscellaneous				
Aboveground Storage Tanks	Several	M	415, 420	Materials stored in tanks: spills, leaks, or improper handling
Oil or Hazardous Material Sites	3	----	415, 420	Oil or hazardous materials and waste: spills, leaks, or improper handling or storage

Activities	Quantity	Threat*	Zone II ID#	Potential Source of Contamination
Miscellaneous				
Stormwater Drains/ Retention\Basins	Numerous	L	415, 420	Debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns
Transmission Line Rights-of-Way - Type: electric	1	L	415, 420	Construction and corridor maintenance, over-application or improper handling of pesticides
Transportation Corridors	1	M	415	Accidental leaks or spills of fuels and other hazardous materials, over-application or improper handling of pesticides
Underground Storage Tanks	5	H	415	Spills, leaks, or improper handling stored materials
Very Small Quantity Hazardous Waste Generator	2	L	415	Hazardous materials and waste: spills, leaks, or improper handling or storage of hazardous materials or waste storage
Wastewater Treatment Plant/Collection Facility/ Lagoon	1	M	415	Treatment chemicals or equipment maintenance materials: improper handling or storage of treatment chemicals or equipment maintenance materials; improper management of wastewater

Water Supply Protection Area % that is Sewered = 0%

Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix 3: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix B: Tier Classified Oil and/or Hazardous Material Sites.

*** THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

Agricultural Activities Recommendations - Manure Storage or Spreading

- ✓ **Best Management Practices** - Work with the Board of Health to develop Best Management Practices that are the most effective, practical means of preventing or reducing pollution from manure storage and spreading. Best Management Practices include properly storing manure, composting, establishing vegetative buffers, keeping animals out of streams, selecting pasture sites carefully, and safely storing commonly used chemicals found in barns.
- ✓ **Education -** Develop an educational outreach program that provides horse owners with best management practices.

3. Local Businesses – Because many small businesses and industries use hazardous materials, produce hazardous waste products, and often store large quantities of petroleum products, there is the potential for degrading water quality. Educating the business community about drinking water protection, and encouraging partnerships between businesses, water suppliers, and communities will enhance successful public drinking water protection practices.

Local Businesses - Recommendations:

- ✓ **Hazardous Materials Program Best Management Practices** - Support the development and implementation of a hazardous materials program that includes a Bylaw or Health Regulation. Such a program educates businesses on hazardous material management requirements, explicitly informs the business community what is expected of them, and decreases the potential future liability businesses may be unknowingly creating for themselves. A local program lets the town serve as a consultant, helping businesses protect themselves. See DEP's website for additional information on developing a program for hazardous materials management at http://www.state.ma.us/dep/brp/dws/files/hazmat.doc.

- ✓ **Inspection Program** – Coordinate efforts with local officials in the development and implementation of an Inspection Program to prevent hazardous substances from entering water supplies. Inspections target facilities that generate, use, store, or disposal of hazardous/toxic materials. Programs can also include floor drain and underground storage tanks inspections. Local inspection programs often provide educational material and technical assistance on Best Management Practices. Building Inspectors are often involved in local inspection programs.
- ✓ **Hazardous Materials Best Management Practices** - Work with local businesses to encourage training on proper hazardous material use, disposal, and emergency response. Refer to the attached list of resources for more information on hazardous material BMPs.
- ✓ **Storage Tanks** - Support your local fire department in upgrading all above and below ground oil/hazardous material storage tanks in order to meet current construction standards. Funding for replacing underground storage tanks is available through the MA Department of Revenue. For more information, refer to http://www.dor.state.ma.us/ust/ust_home.htm

What are "BMPs?"

Best Management Practices are structural (i.e. oil & grease trap catch basins), nonstructural (i.e. hazardous waste collection days) or managerial measures that are used to protect and improve surface water and groundwater quality.

- ✓ **Register Hazardous Waste Generators** - Work with local businesses to register with DEP those facilities that are unregistered generators of hazardous waste or waste oil.
- ✓ **Monitor Land Uses -** Work with the Selectmen, Board of Health and Planning Board to monitor land uses within and proximal to the Zone II. Refer to the Wellhead Protection Plan guidance and model bylaws at http://www.state.ma.us/dep/brp/dws/files/whplan.doc for types of activities that should be prohibited and managed in the vicinity of public or private water supplies.
- ✓ **Lawn care and Landscaping** - Encourage local businesses to incorporate Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides. For more information, refer to http://www.massdfa.org/pesticides/publications/IPM_kit_for_bldg_mgrs.pdf

4. Presence of Oil or Hazardous Material Contamination Sites – The Zone II contains DEP Tier Classified Oil and/or Hazardous Material Release Sites indicated on the map as Release Tracking Numbers 3-0003484, 3-0016922, and 3-0017699.

For more information refer to the attached map, Appendix C, and the Bureau of Waste Site Cleanup's website at http://www.state.ma.us/dep/bwsc/sitelist.htm

Oil or Hazardous Material Contamination Sites – Recommendation:

- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or hazardous material contamination sites.

5. Residential Land Use - If managed improperly, household hazardous waste, septic systems, lawn care, and pet waste can all contribute to groundwater contamination. Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances.

If a septic system fails or is not properly maintained, it could be a potential source of microbial contamination. Fertilizers and pesticides contain hazardous chemicals that can travel through the soil and contaminate ground water if over-applied. Pet waste may contain bacteria, parasites, or viruses that pose a health risk. Water supplies may also be threatened from improper use or disposal of chemical products used in homes. Educating residents on proper disposal of these materials is the best defense against pollution.

Residential Recommendations - Household Hazardous Waste:

- ✓ **Proper Disposal -** Educate residents on the problem of disposing of hazardous materials in landfills, septic systems, wastewater treatment plants, storm drains, and on the ground. Encourage residents to participate in the Town of Rowley's annual Household Hazardous Waste Collection Day.
- ✓ **Alternative Products -** Provide residents with information on options that are available to substitute less hazardous substances for many products used in the home.

Residential Recommendations - Septic systems:

- ✓ **System Care** - Educate residents on private septic systems about using cleaning compounds that are safe for the septic system, on proper disposal practices, i.e. only sanitary waste in the septic system. Information on septic systems can be found at Massachusetts Department of Environmental Protections website http://www.state.ma.us/dep/brp/files/yoursyst.htm.

- ✓ **Proper Disposal** - Residents should dispose of used oil, antifreeze, paints, and other household chemicals properly - not in septic systems.

Residential Recommendations - Lawn Care and Landscaping:

- ✓ **Environmentally Sound Lawn Care** - Provide educational materials to residents about the proper application of pesticides or fertilizers. Landscape with native grasses, native flowering plants and trees and shrubs. Once established, native plants require less water and may not require fertilizer, herbicide or pesticide use. Encourage the use of native plants and landscaping by establishing a demonstration area at a town facility. Information on environmentally sound lawn care practices can be obtained from the Massachusetts Department of Food and Agriculture Pesticide Bureau's website at http://www.massdfa.org.

Residential Recommendations - Heating Oil Tanks:

- ✓ **Aboveground Storage Tanks** - Provide educational materials to residents regarding the proper storage of liquid petroleum products in aboveground storage tanks. The Department requires all Wellhead protection zoning and non zoning controls to prohibit the siting of liquid petroleum products storage in Zone II unless such storage is aboveground, on an impervious surface and either in a container or in an aboveground tank within a building, or in an area that has a containment system designed and operated to hold either 10 percent of the total possible storage capacity of all containers, or 110% of the largest container storage capacity whichever is greater.

Consult with the local fire department for any additional local code requirements regarding aboveground storage tanks. A fact sheet on basement or outside oil tank can be obtained from the Barnstable County Department of Health And Environment at http://www.CapeCod.net/bcdhe/oil/oil.htm.

7. Transportation Corridor - Roadway construction, maintenance, and typical highway use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. De-icing salt washes off into storm drains or onto adjacent ground. In addition, roadways are frequent sites for illegal dumping of hazardous or other potentially harmful wastes.

Top 5 Reasons to Develop a Local Wellhead Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased groundwater monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Transportation Corridor - Recommendations:

- ✓ **Design and Best Management Practices** – Contact the Massachusetts Highway Department to determine if the stormwater drainage systems along Route 95 conform to structural Best Management Practices (BMPs) to prevent pollution from storm water affecting the water quality of Rowley's wells. Best management practices reduce or prevent pollution from reaching water bodies and control the quantity/quality of runoff from a site (refer to *Storm Water Management Handbook*, volume 1 and 2 for information on structural BMPs located in attachments).
- ✓ **Emergency Response Plan** - Inform the Massachusetts Highway Department of the location of Rowley's wells that are in close proximity to Route 95. Provide them with a copy of Rowley's Emergency Response Plan.

8. Comprehensive Wellhead Protection Planning - Protection planning prevents drinking water contamination by managing the land area that supplies water to a well. A Wellhead Protection Plan coordinates community efforts, identifies protection strategies, establishes a timeframe for implementation, and provides a forum for public participation. There are numerous resources available to help communities in developing a plan for protecting drinking water supply wells.

Protection Planning Recommendations:

- ✓ **Develop A Land Acquisition Plan** - Land acquisition projects protect water supplies by limiting the land development potential. Acquisitions can be accomplished by water systems through conservation restrictions, land banking, land purchases and land donations. Sample conservation restrictions are available at: http://www.state.ma.us/dep/brp/dws/. Future development of Zone II is a major concern. The Department recommends that the water district acquire Zone II land closest to the Zone I or land that is subject to high-risk development (refer to Developing a local Wellhead Protection Plan).
- ✓ **Local Controls** - Coordinate efforts with local officials in Boxford, Georgetown, and Ipswich to compare existing controls with current MA Wellhead Protection

Regulations 310 CMR 22.21(2). For more information on DEP land use controls see http://www.state.ma.us/dep/brp/dws/.

- ✓ **Inspection Program** - Develop and implement an Inspection Program for facilities that generate, use, store, or dispose of hazardous/toxic materials. Local Board of Health and Building Inspectors working on inspections often include floor drain and underground storage tanks. Local inspection programs can provide valuable technical assistance on Best Management Practices.

Other land uses and activities that may be potential contaminant sources include gas stations, stormdrains, and junk yards. Refer to Table 2 and Appendix 2 for more information about these land uses.

Identifying potential contaminant sources is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential contaminant sources are identified, specific recommendations like those below should be used to better protect the Rowley wells.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Section 3: Source Water Protection

Implementing source protection measures and Best Management Practices (BMPs) will reduce the Rowley Water Department System's susceptibility to contamination. Additional source protection recommendations are listed in Table 3 and the Key Issues above.

Rowley Water Department is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- ❖ Working towards adopting land use controls that meet DEP's Drinking Water Regulations
- ❖ Purchasing 80 acres in the Zone II of the Boxford Road Well and proposed Pingree Farm Road Wellfield, and for continuing to purchase land for source protection purposes..

Appendix 1 includes specific recommendations for each of the following:

- ➢ **Partner with Local Businesses:**

Since many small businesses and industries use hazardous materials and produce hazardous waste products, it is essential to educate the business community about drinking water protection. Encouraging partnerships between businesses, water suppliers, and communities will enhance successful public drinking water protection practices.

- ➢ **Provide Outreach to the Community:**

Public education and community outreach ensure the long-term protection of drinking water supplies. Awareness often generates community cooperation and support. Residents and business owners are more likely to change their behavior if they know where the wellhead protection recharge area is located; what types of land uses and activities pose threats; and how their efforts can enhance protection.

- ➢ **Plan for the Future:**

One of the most effective means of protecting water supplies is planning, such as the adoption of local controls to protect watersheds and ground water. These controls may include health regulations, general ordinances, and zoning bylaws that prohibit potential sources of contamination from wellhead protection areas.

Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures. These recommendations are only part of your ongoing local drinking water source protection.

Section 4: Additional Resources Available for Source Protection

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community.

The assessment and protection recommendations in this SWAP report are provided as a tool to spur community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities.

The Rowley Water Department should supplement this SWAP report with local information on potential sources of contamination and land uses. To aid in the protection of the wells, local information should be maintained and updated periodically to reflect land use changes in the Zone II. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Funding Resources:
The Department's Wellhead Protection Grant Program and Source Protection Grant Program provide funds to assist public water suppliers in addressing Water Supply Source Protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. For additional information, please refer to the program fact sheet from this year. Please note: each spring DEP posts a new Request for Response for the Grant program (RFR).

The Aquifer Land Acquisition Program protects both surface and groundwaters used for drinking water purposes. Land acquisition is considered to be the single best way to protect a drinking water supply. Land acquisitions for water supply protection purposes include outright purchases, conservation restrictions, land donations, and interest in land taken by eminent domain. These funds will be available to water suppliers and municipal governments through the process described below. All publicly owned water suppliers, districts, or municipalities are invited to express an interest by submitting a Statement of Need covering any land purchase expected to be made to protect a public water supply that can be completed by June 30, 2002. The Department of Environmental Protection will select respondents of the Draft Statement of Need to submit a completed Final Statement of Need based on DEP land acquisition standard operating procedures, ability to use the funds by June 30, 2002, and other environmental criteria as determined necessary by the Secretary and Commissioner.

For further information on the Aquifer Land Acquisition Program, contact Joseph McNealy, Director of Program Development, Department of Environmental Protection, at (617) 556-1068.

Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, Aquifer Land Acquisition Program, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: http://www.state.ma.us/dep/brp/mf/mfpubs.htm.

For More Information

Contact Anita Wolovick in DEP's Wilmington Office at (978) 661-7768 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, town boards, and the local media.

Section 5: Appendices

1. Protection Recommendations
2. Regulated Facilities within the Water Supply Protection Area
3. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas
4. Additional Documents on Source Protection in Rowley

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I?	**NO** (Haverhill Street Well)	Investigate options for gaining ownership or control for this source.
	YES (Boxford Road Well & Pingree Farm Road Wellfield)	Currently, the Town of Rowley owns the land surrounding the Boxford Road Well and Pingree Farm Road Wellfield. A request went before Town Meeting on November 5, 2001 to transfer control of the Zone I to the water department. There was a vote to approve a conservation restriction for the Zone I of each well.
Is the Zone I posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is Zone I regularly inspected?	**YES**	Continue daily inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I?	**NO**	Monitor non-water supply activities in Zone Is, and investigate options for removing these activities.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21 (2)?	**NO**	Monitor acitivities in Zone II to assure compliance with local wellhead protection controls.
Do neighboring communities protect the Zone II areas extending into their communities?	**Unknown**	Request that municipal officials in Boxford, Georgetown, and Ipswich develop land use restrictions that meet 310 CMR 22.21 (2).
Planning		
Does the PWS have a Wellhead Protection Plan?	**NO**	Develop a wellhead protection plan. Follow "Developing a Local Wellhead Protection Plan" available at: www.state.ma.us/dep/brp/dws/.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**YES**	Augment plan by developing a joint emergency response plan with fire department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a wellhead protection committee?	**NO**	Establish a committee that includes representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	**NO**	Currently, the Rowley Water Department and the Rowley Fire Department are coordinating efforts to conduct inspections. The town is encouraged to continue this program, and to include municipal facilities. For more guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc.
Does the PWS provide wellhead protection education?	**NO**	Currently, the only outreach is through the annual Consumer Confidence Report. Increase residential outreach through bill stuffers, school programs, Drinking Water Week activities, and coordination with local groups. Aim additional efforts at commercial, industrial and municipal uses within the Zone II.

APPENDIX A: DEP PERMITTED FACILITIES WITHIN THE WATER SUPPLY PROTECTION AREA

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
	PAUL GETCHELL USED CARS	166R HAVERHILL ST	ROWLEY	HANDLER OF HAZARDOUS WASTE	VERY SMALL QUANTITY GENERATOR
	OMEGA LABORATORIES	406 HAVERHILL ST	ROWLEY	HANDLER OF HAZARDOUS WASTE	VERY SMALL QUANTITY GENERATOR
	VETERANS GARAGE	165 NEWBURYPORT TURNPIKE	ROWLEY	FUEL DISPENSER	FUEL DISPENSER

UNDERGROUND STORAGE TANKS

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
GSX CORPORATION	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	4000	
GSX CORPORATION	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	4000	
GSX CORPORATION	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	4000	
SCA EASTERN DISPOSAL	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	1000	#4 USED OIL
EASTERN DISPOSAL	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	500	
GSX CORPORATION	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	500	#6 HEATING OIL
GSX CORPORATION	103 BOXFORD ROAD	ROWLEY	WASTE DISPOSAL	500	#5 HEATING OIL
VETERANS MOBIL	165 NEWBURYPORT TURNPIKE	ROWLEY	SERVICE STATION	5000	GASOLINE
VETERANS MOBIL	165 NEWBURYPORT TURNPIKE	ROWLEY	SERVICE STATION	5000	GASOLINE
VETERANS MOBIL	165 NEWBURYPORT TURNPIKE	ROWLEY	SERVICE STATION	4000	GASOLINE
VETERANS MOBIL	165 NEWBURYPORT TURNPIKE	ROWLEY	SERVICE STATION	3000	DIESEL
VETERANS MOBIL	165 NEWBURYPORT TURNPIKE	ROWLEY	SERVICE STATION	5000	DIESEL

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: http://www.state.ma.us/dfs/ust/ustHome.htm

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities located within the water supply protection area(s) should be considered in local drinking water source protection planning.

APPENDIX B – Table of Tier Classified Oil and/or Hazardous Material Sites within Rowley Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
3-0003484	110 Boxford Road	Rowley	Oil
3-0016922	165 Newburyport Turnpike (Route 1)	Rowley	Hazardous Material
3-0017699	165 Newburyport Turnpike (Route 1)	Rowley	Oil

For more location information, please see the attached map. The map lists the release sites by Release Tracking Number (RTN).